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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,047	01/17/2006	Shugo Usami	ASAIN0175	1796

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ARLINGTON, VA 22204

EXAMINER

JANKUS, ALMIS R

ART UNIT	PAPER NUMBER
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2628

MAIL DATE	DELIVERY MODE
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09/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,047

Applicant(s)

USAMI ET AL.

Examiner

Almis R. Jankus

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/13/06, 12/08/06, 3/07/07, 5/24/07, 7/25/07.

DETAILED ACTION

1. Claims 1-8 are presented for examination.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorensen et al.

With respect to claim 1, Lorensen et. al. teaches the claimed inputting the boundary representation data of an object into a computer via external data input means, at figure 1, "Data Acquisition"; converting the boundary representation data into a triangle patch having a phase by data converting means, at figure 1, "image processing, connectivity mask", and at figure 3; dividing a space into rectangular parallelepiped cells whose boundary planes cross one another at right angles to associate the cell with a triangle to be included in the cell by associating means, at page 164 with "Surface construction, the topic of this paper, involves the creation of a surface model from the 3D data. The model usually consists of 3D volume elements (voxels) or polygons.

Users select the desired surface by specifying a density value. This step can also include the creation of cut or capped surfaces.”; dividing the triangle patch having the phase, floating in a space, by cell faces to bring a state in which all the triangles are arranged inside the cell and on a boundary by dividing/arranging means, at figure 3; integrating ridge lines by ridge line integrating means without changing the phase, at page 164 with “Our approach uses information from the original 3D data to derive inter-slice connectivity, surface location, and surface gradient. The resulting triangle model can be displayed on conventional graphics display systems using standard rendering algorithms.”; assigning each triangle and a vertex of the triangle to the cell with reference to index data of the vertex by cell assigning means, at page 165 with “We create an index for each case, based on the state of the vertex. Using the vertex numbering in Figure 4, the eight bit index contains one bit for each vertex.”; and setting an attribute value of each cell by labeling means, at page 165 with “This index serves as a pointer into an edge table that gives all edge intersections for a given cube configuration.”

Claim 2 further requires after the ridge line integration by the ridge line integrating means, it is checked whether or not triangle groups decreased as a result of the ridge line integration satisfy predetermined conditions by state check means, and a defective portion is simplified by simplifying means in a case where the predetermined conditions are not satisfied, and thereafter the ridge line integration is performed again by the ridge line integrating means. Lorensen et. al. teaches this at page 164 with “Unfortunately, if

Art Unit: 2628

more than one contour of surface exists on a slice, ambiguities arise when determining which contours to connect" and "Our approach uses information from the original 3D data to derive inter-slice connectivity, surface location, and surface gradient. The resulting triangle model can be displayed on conventional graphics display systems using standard rendering algorithms."

Claim 3 further requires the volume data and the triangle patch having the phase to be prepared, and set operations of nonboundary cells, the nonboundary cell to a boundary cell, and the boundary cell to the boundary cell are performed based on the connected triangles, Lorensen et. al. teaches this at page 166 at section 5.1.

Claim 4 is similar to claim 1; claim 5 is similar to claim 2; claims 6-8 are similar to claim 3, and are rejected under similar rationale for similar respective features.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5 and 8 recite the limitation "the program" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2628

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 4-6 and 8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a computer program. Computer programs fail to fit any of the four statutory classes of invention.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R. Jankus whose telephone number is 571-272-7643. The examiner can normally be reached on M-F, 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2628

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJ



ALMIS R. JANKUS
PRIMARY EXAMINER